

## 5. Components and activities

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### 5.1 Knowledge sharing (SO1)

Though there is still a lot to do, significant efforts have already been made in the region with regard to climate data collection and analysis. West African climate research institutions include the AGRHYMET Regional Centre of CILSS, the African Centre of Meteorological Applications for Development (ACMAD) or research projects and networks such as HYCOS-AOC (Hydrological Cycle Observing Systems for West and Central Africa), AIACC (the West African Components of the Assessment of Impacts and Adaptation to Climate Change Programme), the West and Central African Component of the Flow Regimes from International Experimental and Network Data Project (FRIEND-AOC) and AMMA (Multi-disciplinary Analysis of the African Monsoon Programme). Accordingly, it is essential to encourage research initiatives and help them to further meet the concerns of decision makers and water users and contribute appropriately to disseminating their results. Objective 1 of the adaptation strategy is to meet this need to strengthen regional collaboration in the field of research and dissemination of scientific knowledge on climate variability and change and their impacts on water resources and ecosystems.

The following activities envisaged aim at achieving this objective:

- to conduct studies leading to the identification of information needs on the climate and its impacts, as expressed by:
  - water users (including grassroots communities) by conducting rapid appraisal methods and holding scoping workshops;
  - political, economic and community decision makers through scoping workshops and interviews of leaders and target groups;
  - basin organizations through meetings with the authorities and technical personnel of the region's major basin organizations: OMVS, OMVG, LCBC, NBA.
- to promote decision-support scientific research by:
  - putting at the disposal of researchers, the information needs of water users, basin organizations and decision makers;
  - helping in resource mobilization for research efforts dealing with identified needs for scientific information;
  - putting research results at the disposal of decision makers and water users;
- to promote research on indigenous knowledge (climatic information collection and interpretation systems) by:
  - conducting basic studies on indigenous knowledge relating to the collection and interpretation of information on the climate and its impacts;
  - sensitizing researchers and putting at their disposal the results of studies on indigenous knowledge;
  - helping in resource mobilization for research on indigenous knowledge;
- to promote research on the impacts of climate variability and change on ground water (availability and quality);

- to encourage regional collaboration between researchers and research centres on water, ecosystems and the climate by:
  - assisting in networking and exchanging information;
  - assisting in harmonizing research protocols, where necessary (e.g. GIS on international river basins, transboundary ecosystems, etc.);
  - conducting joint research activities;
- to undertake sensitization activities among States, organizations for regional integration (ECOWAS, WAEMU) and development partners (bilateral cooperation agencies, ADB (African Development Bank), the World Bank, UN etc.) for increased funding of research on water and the climate in West Africa, with particular emphasis on:
  - improving climate information collection networks;
  - creating databases and strengthening existing ones;
  - training of researchers;
  - strengthening and broadening networks of experts and research projects such as HYCOS-AOC and FRIEND-AOC, AMMA, AIACC;
  - extending the Sahelian IPCC (CILSS) to the whole of West Africa;
- to support basin organizations in strengthening their internal capacities with regard to the collection, analysis and utilization of scientific data associated with the climate;
- to support activities conducted in West Africa by the recently created Network of Basin Organizations, for it to serve as a forum for exchange of views among basin organizations in climate information collection and management.

## **5.2 Promotion of IWRM and the ecosystem approach (SO2)**

As underlined above, West African countries are strongly water-interdependent because the bulk of surface water is located in shared basins. As a reminder, except for the Cape Verde Islands, each country of the region shares at least one transboundary basin with others. Considering that these transboundary basins consist of a unique ecosystem shared among several political areas, it is necessary to implement the principles of Integrated Water Resources Management (IWRM) and the ecosystem approach in the management of these catchment areas.

Coastal and inland aquatic ecosystems play host to a significant portion of the biodiversity of the world in general and West Africa in particular. This function strongly depends on the variation of water level and quality in time and space. It is therefore essential to promote measures aimed at reducing the impacts of climate variability and change on these ecosystems to enable them to continue to play their role of reservoirs and refuge of biodiversity.

There are other reasons for ensuring good wetland management. Their essential functions include water storage, groundwater recharge, abating the magnitude of floods, stabilizing soil surface conditions and erosion control, water purification and carbon

**Box 2. IWRM and the ecosystem approach**

The IWRM principles are as follows: (a) the recognition that water is a limited, vulnerable and essential resource for life, development and the environment; (b) the need for a participatory approach in its management; (c) the recognition of the importance of women's role in water management; (d) the need to recognise that water is an economic good.\* The ecosystem approach is defined as a strategy for the integrated management of lands, water and living resources in order to promote sustainable and equitable conservation and use. This approach aims at: (a) maintaining the functions and services of ecosystems; (b) equitably sharing the products and benefits generated; (c) promoting adaptive management strategies; (d) decentralized management; and (e) encouraging intersectoral and decentralized cooperation.\*\*

\* Global Water Partnership 2000

\*\* Convention on Biological Diversity. COP5



A Ramsar site invaded by *Typha* grass, North Nigeria, M. Niasse

sequestration. As the climate changes, these various functions become increasingly important. Consequently, the rehabilitation and sustainable management of wetlands constitute an important measure in adapting to climate variability and change.<sup>1</sup>

The West African context is relatively favourable to increased efforts to protect wetlands. As a matter of fact, with the exception of Cape Verde, all the States of the region have adhered to the Ramsar Convention.<sup>2</sup> In pursuance of this Convention (Art. 3), contracting parties shall create favourable conditions for the conservation of wetlands included in the Ramsar list. Moreover, contracting parties shall undertake to

<sup>1</sup> With regard to this issue please refer to Bergkamp and Orlando 1999; see also : Klein 2001.

<sup>2</sup> The Ramsar Convention or Convention on Wetlands of International Importance of 1971.

promote the sustainable utilization of any wetland located on their territories, be they included in the Ramsar list or not. Today, West Africa has 46 Ramsar sites with a total surface area of 10,073,059 ha. What is needed is to help the States of the region to fulfil their commitments as contracting parties to the Ramsar Convention: i.e. good management of current Ramsar sites, identification and classification of new sites, etc.

The following activities envisaged aim at achieving specific objective 2:

- to help in strengthening basin organizations where they exist and setting them up where they do not;
- to conduct inventories of wetlands on river basins and identify those whose restoration and conservation can significantly reduce vulnerability to climate variability and change;
- help in classifying wetlands as Ramsar sites, preparing and implementing their management plans;
- in collaboration with river basin organizations and international institutions concerned (IUCN, Wetlands International, Worldwide Fund for Nature), to initiate pilot experiments for sustainable restoration and conservation of wetlands;
- to promote research on environmental flows in order to better understand water requirements of aquatic ecosystems for maintaining their essential functions;
- to promote additional research activities on the interaction between wetlands and climate variability and change: impacts of climate variability and change on wetlands; importance of wetlands as a means to adapt and mitigate climate variability and change;
- to encourage the NBA, Mali, institutions concerned and development partners to launch a major initiative aimed at restoring and conserving the Niger River Inland Delta, which is the largest West African wetland;
- to encourage LCBC, institutions concerned and development partners to increase efforts aimed at restoring and conserving Lake Chad;
- to back the component on transboundary waters of the Subregional Action Plan on Desertification Control (programme spearheaded by CILSS);
- to undertake studies on the efficiency of IWRM as a strategy to adapt to climate variability and change;
- to help States in the formulation and implementation of national policies on water, which take into account the IWRM principles and ecosystem approach. In this context:
  - to back the SISCOA-IWRM process and help in implementing the regional IWRM Plan of Action;
  - to back pilot initiatives aimed at implementing IWRM (at subcatchment, catchment area and country levels);
  - to help in exchanging experience;
  - to help in capacity building;
  - to ensure coherence in the support provided to efforts undertaken as part of IWRM (European initiative etc.);

- to promote the integrated management of coastal areas by relying on the Regional Coastal and Marine Programme (RCMP) which is a joint initiative by FIBA, IUCN, WI, WWF;
- encourage States to ratify and implement the 1997 United Nations Framework Convention on the Non Navigational Uses of Transboundary Watercourses.

### 5.3 Identification and promotion of appropriate adaptation practices and techniques (SO3)

As previously mentioned, one of the important problems to be solved relates to the poor level of exchange of adaptation experience, including good practices. The current fragmented nature of adaptation efforts undertaken by the various States of the region reduces, among others, the opportunity for achieving economies of scale. Indeed the conception and implementation of appropriate responses to climate change is a huge scientific and technical challenge that the poor West African countries cannot take up individually. They will do better to pool their expertise and resources for greater efficiency. Finally, the great interdependence of countries in the field of water resources calls for a regional approach in the preparation and implementation of adaptation measures.

The following activities envisaged aim at achieving specific objective 3:

- to undertake an inventory and analysis of local experience related to adaptation to climate variability and change and identify best practices;
- to optimize the use, and disseminate at regional level, the best local strategies and techniques to adapt to climate variability and change (e.g. soil erosion control techniques, cereal varieties tolerant to drought or soil and water salinity, rain water harvesting techniques);
- to help the States and regional integration organizations (WAEMU, ECOWAS) in order to promote the exchange of strategies and techniques to adapt to climate variability and change (e.g. easing of tariff and non-tariff barriers to trade);
- to help basin organizations and the States in order to invest in and further support research on adaptation techniques and measures;
- to undertake sensitization and advocacy activities with development partners in order to increase support for development and efforts aimed at implementing adaptation measures at river basin or regional level;
- to seek the support of development partners for an effective North-South and South-South transfer of adaptation technologies;
- to support research on early warning systems related to drought (e.g. CILSS' experience in the Sahel to be strengthened and extended to the whole region) and floods;
- to support research efforts on adaptation capable of also playing the role of mitigative measures for greenhouse gas emissions (e.g. reforestation as carbon sink);
- to help in the rigorous application of the results of environmental and social impact studies in the planning of structural adaptation techniques and measures (e.g. dams, inter-region transfers, etc.).

#### **5.4 Setting up the regional consultative framework (SO4)**

The objective of setting up the regional consultative framework actually consists in furthering and formalizing the regional dialogue on water and climate change. It is interesting to note the recent creation of the Sahelian IPCC, which will contribute to the improvement of scientific output on climate in the Sahel. It would be desirable that such an initiative be widened, in order to cover the whole West African region. Within the framework of this objective, the adaptation strategy would meet the need for the creation of an efficient communication channel between research institutions on the one hand and the political decision makers, water users, civil society and development partners on the other hand.

The following activities envisaged aim at achieving strategic objective 4:

- to set up and run a regional water and climate change network to serve as a dialogue framework;
- to organize periodic meetings aimed at reviewing and discussing research results within “ Open Science ” forums;
- to organize preparatory meetings for the Conferences of Parties (COP) of the Convention on Climate Change in order to ensure a coordinated and strong participation of West Africa;
- to give an opinion and, where necessary, to write “ Position Papers ” on subjects of regional concern related to water and climate change;
- to organize on-site field visits and in countries where promising adaptation techniques and measures are taken;
- to organize targeted meetings (for example with WAEMU Parliamentarians, ECOWAS officials, NEPAD officials) to promote greater attention to climate in the regional and continental policies;
- to develop and implement an action plan of assistance to countries in the development and execution of their NAPA (National Adaptation Plans of Action);
- to undertake advocacy and lobbying activities for the funding of West African adaptation efforts;
- to organize seminars and workshops for reflecting and capitalizing on results related to adaptation. These meetings should be targeted on specific topics. The following is an indicative list:
  - management of natural disasters (floods, drought, desertification);
  - small and large dams as response options to climate variability and change;
  - taking climate variability and change into account in the design and construction standard of water infrastructures (problems of safety and flexibility of structures);
  - taking climate risks into account in poverty alleviation strategies;
  - alternative management of water resources: better management of the demand, greater efficiency of water distribution, greater productivity of water, etc.